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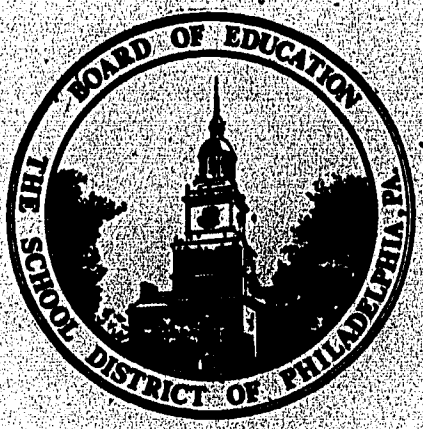
ABSTRACT

The second year of a Title VII project entitled "Bilingual Learning Centers in High Schools" is described. The program created learning centers in two Philadelphia public and one diocesan school designed to provide individualized instruction to limited-English speaking, primarily Spanish-speaking students in bilingual education programs or to students with low scores on norm-referenced tests. The goal of the evaluation was to assess the effect of learning center participation on student performance on published reading tests in English and Spanish, on a locally developed test of English aural comprehension, and on attendance and dropout incidence. The major conclusions were that: (1) positive effects were found on English reading and language scores, Spanish reading scores, and (where evaluated in the public schools), on attendance and dropout rates; (2) effects attributable to learning center use were not found in mathematics or English aural comprehension performance; and (3) Spanish reading was improved for students who studied English but not Spanish in learning centers, apparently a transfer phenomenon. (MSE)

BILINGUAL LEARNING CENTERS IN HIGH SCHOOLS 1982-1983



Report No. 8429

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SCHOOL DISTRICT OF PHILADELPHIA

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BILINGUAL LEARNING CENTERS IN HIGH SCHOOLS
1982-1983

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Report No. 8429
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Federal Evaluation Resource Services
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EXECUTIVE SUMMARY

This report describes the second school year of the Title VII project, Bilingual Learning Centers in High Schools.

The program provided individualized learning centers at two public and one diocesean school and was fully implemented at all three sites. The learning centers were designed to provide individualized instruction to limited English speaking, primarily Spanish speaking, students who were in bilingual education programs or who had low scores on norm-referenced tests.

The goal of the evaluation was to assess the effect of learning center participation on the performance of students on published reading tests in English and in Spanish, on a locally developed test of English Aural Comprehension used extensively in the school district, and on attendance and dropout incidence.

The major conclusions were:

- Positive effects attributed to students' learning center use were found on English reading and language scores, on Spanish reading scores, and, at the public schools where they were evaluated, on attendance and on dropout rates.

- Effects attributed to students' learning center use were not detected for either mathematics or for English aural comprehension performance.

- A surprising finding, worthy of study in a controlled experiment, was that Spanish reading was improved for students who studied English, but not Spanish, in a learning center. This appeared to be a transfer of learning phenomenon that was the mirror image of one of the bases of bilingual education: transfer of learning from Spanish to English.

BILINGUAL LEARNING CENTERS IN HIGH SCHOOLS

The aim of the Bilingual Learning Centers in High Schools project is to improve the cognitive skills of limited English proficiency (LEP) high school students, whose first language is not English and who are in need of English for Speakers of Other Languages (ESOL) instruction or who scored below the national 26th percentile on the standardized tests used in their school. It serves the two public high schools with the largest numbers of Spanish-dominant students and a heavily impacted diocesean school for girls. Individualized learning centers and bilingual classroom aides are used to individualize the instruction.

Rationale

There was a critical need to individualize the instruction of LEP students who were mainly of Hispanic origin and who attended Edison, Kensington, and Little Flower High Schools. A review of pre-program test results and records indicated that, at Edison and Kensington, there were many students who required ESOL classes and many others who, despite mastery of oral English skills, scored poorly on Form A of the California Achievement Tests (CAT) that were used to evaluate the performance of mainstream public school students. These findings had suggested that the ongoing bilingual program could be improved in two ways: First, it could be expanded to serve Hispanic and other non-English dominant pupils who had low CAT scores. Second, a bilingual learning center could be added to the school to provide individualized and small group instruction.

The Little Flower High School, an all girls school, was selected by the Philadelphia Archdiocese for participation in the project. This school had a substantial number of non-English dominant pupils who scored below the national 26th percentile on the Scholastic Testing Service (STS) examinations and were enrolled in ESOL classes supported by Chapter 1, ECIA. A bilingual learning center was installed to serve these pupils.

Previous Findings

The learning centers were begun in the spring of 1981 with a one year Title VII grant. In the first full project year, 1981-82, participation in the learning center improved the rate of acquisition of aural English, as compared to the rates found among Chapter 1 students who were studying ESOL but did not have access to a learning center. The data suggested that the improvement was most pronounced among the students who had studied ESOL for a number of years prior to using a learning center. In effect, use of the learning center extended the number of years that ESOL instruction resulted in acquisition of new aural English competencies.

No evidence was found for improved growth in English reading skills, English language skills, or mathematics. Examination of the students' test scores suggested that the test levels used during the first project year were too advanced for the students who were served by the learning centers. The tests were probably not capable of detecting any growth that might have occurred. As a result of this finding, tests judged to be at a more appropriate level of difficulty were used for the current evaluation.

No statistically significant effect of learning center use on Spanish reading skills was detected. The statistical model used to analyze the data had only a low level of explanatory power, probably because only a few of the students tested actually studied the Spanish-language in the learning centers.

An objective regarding the equipping of the learning centers was attained. One regarding staff development activities was partly attained.

Implementation

At the beginning of the school year the learning centers were operational at all sites. Students were selected from among those in the on-going ESOL and bilingual programs and from among the Hispanic pupils with low test scores. The selection process continued through October. The primary instructional equipment in the learning centers was retained from the previous school year, but additional instructional materials and one type of software to be used with the equipment were delivered during the project year. Personnel changes were made at one of the sites, Kensington High School, where two new ESOL teachers replaced those who taught there the previous year.

The Bilingual Learning Centers at Edison, Kensington, and Little Flower High Schools provided similar instructional resources, but the programs with which they were associated were not the same. They varied from ESOL without first language instruction at the diocesan site to a large and very comprehensive bilingual program at Edison High School.

The Edison program, the most comprehensive of the three, had a Spanish-English bilingual staff of seven teachers. A variety of mathematics, social studies, science, and language courses was offered in the Spanish language, along with ESOL and specialized courses of Puerto Rican History, clerical practice, and typing in Spanish. The Kensington program, with a bilingual staff of five, offered a more restricted selection of courses in these areas of the curriculum. The program at Little Flower High School consisted of one bilingual teacher who taught ESOL.

The Bilingual Learning Centers in High Schools project provided supplementary resources in order to increase individualization. At Edison High School the project supported a staff of five additional people, a bilingual education resource specialist and four bilingual aides. At Kensington it supported a resource specialist and three bilingual aides. At Little Flower High School, the ESOL teacher managed the center with the assistance of an aide who was supported by the project.

A curriculum developer served all three sites, helping to coordinate the program by arranging for the equipment and material. During an illness of one of the resource specialists, the curriculum developer took over the task of supervising one center intermittently for several weeks.

The diocesan ESOL teacher and the public school resource specialists reported that they established working relationships with the schools' roster chairpersons to assure that students who were eligible for the program knew about it and to assure that those who wished to participate were given class schedules that included use of the center. Typically, the pupils were assigned to learning centers for five periods per week, in a pattern of one or two assigned periods on a given day. Pupils with severe problems or multiple difficulties were assigned more frequently. The activities in the learning center emphasized oral and written English and mathematics. At Edison, the center was used to develop competence in the Spanish language as well.

The number of pupils served by the learning centers varied among the project sites. In the fall, Edison served about 55 students, but the number grew to 80 by the end of the school year. At Kensington and Little Flower, the largest number of students was served in the fall. At Kensington the number declined from 72 to 60; at Little Flower, from 33 to 21.

Many of the students had been participants in the learning center from as far back as spring, 1981, when the learning centers were initiated with a one-year Title VII grant.

Kensington and Little Flower had small numbers of non-Hispanic pupils whom they were serving in the centers, most of whom spoke Oriental languages and were in ESOL classes. To serve the Oriental students at Kensington, a Vietnamese aide served in the learning center and in the ESOL classes for several periods per week at no cost to the Title VII project.

At Little Flower, many students were selected on the basis of low standardized test scores and knew more English than the typical public school participant. At the public schools, the number of Hispanic pupils who were competent in oral English but had low CAT scores was fewer than planned because many of these students were attracted to remedial programs that were offered to monolingual English-speaking students.

The Bilingual Learning Centers were observed 16 times during 20 visits to the project schools. The number of students in the centers at any one time ranged from 5 to 16, usually working in small groups or individually. The resource specialists and aides were usually working with the students, but they were also observed keeping the detailed records used to manage the individualized instruction.

Teaching machines and other instructional devices were generally observed being used. A common instructional pattern, observed at all the program sites, was for the class to be divided, with some groups working with the resource specialist other groups working with the aides, and several individuals engaged in using the instructional equipment by themselves.

ATTAINMENT OF OBJECTIVES

Objective 1: Project schools will have learning centers containing the following materials and equipment:

- .System 80
- .Beginning Concepts Learning Kits
- .Language Masters
- .Skill Tapes in Mathematics
- .Tape Recorders
- .Spellbinders
- .Voxcoms
- .Craig Readers
- .Calculators

This objective was considered attained. Six of the nine types of materials and equipment listed in the objective were available. Two of the three items not on hand were not purchased because they were not deemed to be valuable by project management personnel. In addition to the equipment in the objective, Craig Creative Curriculum Reader software was purchased for the public school sites.

The equipment on hand is shown in Table 1. The 1981-1982 evaluation report indicated that the Skill Tapes in Mathematics were superfluous because their content was duplicated by the System 80 materials and that the Spellbinder was too childish for high school students. These two devices should probably have been deleted from the objective. The report also suggested that project personnel believed that the Beginning Concepts Learning Kits would be good acquisitions, but they were not added to the array of equipment and materials available during the current project year. (As mathematics was not generally taught at the Little Flower learning center, calculators were not kept on hand.)

Objective 2: Ten hours of staff development will be provided for teachers and for aides.

This objective was partially attained. Four workshops designed to provide a total of 10 hours of staff development, were provided for the teachers associated with the bilingual programs at project schools and for the learning center staff. Payroll records, however, suggested that the workshops actually provided eight hours of staff development.

Four workshops, lasting about two hours each, were conducted by school district personnel. The topics were: Curriculum Resources Available to Bilingual and ESOL Teachers, Methods of Teaching Reading in Secondary ESOL Classes, Oral Language Teaching Techniques (for teachers only), Puerto Rican Language and Culture (for aides only), and Testing and Project Evaluation.

Although paid for their time, teachers participate in the workshops on a voluntary bases. Payroll records suggested that attendance was reasonably good, with 13 of the 16 teaching personnel associated with the project attending the sessions. Those who attended average 6.4 out of a possible eight hours. Seven of the eight project classroom aides participated, and they averaged 5.3 hours of attendance.

The workshops were in the form of brief lectures, followed by question and answer periods. At the workshop observed by the evaluators, the question and answer period occupied about a quarter of the presentation and was based on items jotted down by the audience and then handed to the presentors after the formal presentations. At one workshop, separate activities were provided for the teachers and for the aides.

Objective 3: The English reading performance of program participants will be improved to the extent that there will be a statistically significant ($p < .10$) relationship between the number of months a pupil is in the program and the relevant Stanford Achievement Test scores, when background characteristics are controlled statistically.

This objective was attained. As shown in Table 2, when the individual student background characteristics were taken into account, there was a statistically significant relation between the number of months in the program and the student's Total Reading Score on the Stanford Achievement Test (Sixth Edition).

The effect of the program on Total Reading scores was most pronounced in the initial months of exposure and tended to level off at the end of the second year. The effectiveness of the project was most pronounced at Kensington and Little Flower, while at Edison, the same general trend was found, but it was not significant.

The Total Reading score of the Intermediate Level 1 test that was used to evaluate this objective is a combination of the Word Study Skills and Reading Comprehension subtests. Separate analyses of the two component scores indicated that the program was effective in both areas.

Of the 104 students in the project who took the Stanford in May, 96 students had sufficient data to be included in the analysis. The key question in determining the impact of the program was whether students with longer exposure to the program (the maximum number of months of participation in the project and its predecessor was 25) tended to outperform other students.

The variables in the analysis were broken into two types, background variables and program variables. The critical variable set, Program, reflects months of participation in the bilingual learning center and was significant ($F=3.11$, $df=4.76$, $p<.05$). Program was represented by four variables: the linear effects of participation at Edison, at Little Flower, and at Kensington, and the non linear, quadratic effect of participation for all three schools combined.

The fact that all three linear weights were positive and that the set attained overall significance supported the conclusion that the project was effective in teaching reading. The linear effects for Kensington and Little Flower were independently significant. The non linear effect was significant and negative, suggesting that the program effect levelled off over time. The results suggested that at Kensington and Little Flower the growth of English reading skills attributable to use of the learning centers came to an end late in the second year of project participation (at 17 months at Kensington, at 19 months at Little Flower). At Edison, the linear effect was not independently significant nor was it as large; however, it was in the same direction as at the other schools, suggesting that growth in this skill was slower and less reliable than elsewhere.

The background variables were included in the analysis to control statistically for differences among pupils' test scores that were not related to use of a learning center.

Three time-related background characteristics, Age, Length of Residence in the United States (U.S.), and Length of Enrollment in English for Speakers of Other Languages classes (ESOL) were likely to be strongly associated with students' reading test performance and with their amount of exposure to the learning centers. To isolate the effect of the centers on score, they were held statistically constant. Rather than assume that these characteristics had unchanging, or linear, effects, the evaluators included both linear and quadratic (i.e., nonlinear) terms for each of them, creating two-variable sets. None of the time-related variable sets reached statistical significance in the analysis of English reading scores.

The next background variable set, School, reflects the differences among the three schools attended by the project students. It is significant, suggesting that, independently of the other variable sets in the analysis, students at some of the project schools outperformed those at the other project schools.

The final background variable set, Ability, is associated with pupil's initial ability. In order to tap it, the evaluators formed seven variables to reflect the pupil's ESOL level at the beginning of the school year and the number of periods per week that pupils were assigned to the center for instruction in English. This set was highly significant ($F=5.27$, $df=7.76$, $p<.01$), meaning that English reading test performance was indeed related to the students' English ability at the beginning of the year.

Objective 4: The English Language scores of program participants will be improved to the extent that there will be a statistically significant ($p<.10$) relationship between the number of months a pupil is in the program and the relevant Stanford Achievement Test score, when background characteristics are controlled statistically.

This objective was attained. When the individual student backgrounds were taken into account, there was a statistically significant relation between the number of months in the program and the pupil's Language score on Intermediate Level 1 the Stanford Achievement Test. The effect of the program on Language skills was most pronounced in the initial months of exposure and tended to level off at the beginning of the second year.

Table 3 presents the analysis of the Language scores. The statistical model and tests of significance used in this analysis were identical to those used in the evaluation of Objective 3. Of the background variables, only one, Ability, had a statistically significant effect.

The variable set, Program, representing the effectiveness of the learning centers, comprised four variables, linear trends for the number of months of learning center use at each of the three project schools and a quadratic trend for all of the schools combined Although none of the individual components was independently significant, when taken as a group there was a significant effect for time in the project ($F=2.78$, $df=4.76$, $p<.05$). The analysis suggested that upon entry into the project, participation increased language skills at a rate of about two scale score points per month at Kensington and Little Flower. and a quarter of a point per month at Edison, with the negative quadratic component suggesting that the program was more effective when students were first admitted.

The conclusion that the program had a significant impact was based on the F test for the set of variables. That none of the components was independently significant means that there were no differences among the schools. However, since all three schools had positive linear weights, the evaluators concluded that the overall effect of the project was to improve the scores of students, especially in the first year of participation.

Objective 5: The mathematics Computation scores of program participants will be improved to the extent that there is a statistically significant ($p<.10$) relationship between the number of months the pupil is in the project and the relevant Stanford Achievement Test score, when the background characteristics are controlled statistically.

This objective was not attained. When student's background information was held statistically constant, students with many months in the program did not outperform pupils with less exposure to a statistically significant degree.

To equate the 45 scores in math computation based on the Comprehensive Test of Basic Skills in Spanish (CTBS/Español) Level 3 test used by one school with the 63 computation scores based on the Stanford test used elsewhere in the program, each scale score was converted into a z score. Six pupils were deleted from the analysis because of incomplete background data.

Table 4 presents the analysis of the equated mathematics computation scores. The statistical model and tests of significance used in the analysis was the same as that used in the evaluation of Objective 3.

The background variables were statistically significant when taken as a set ($F=2.41$, $df=15.82$, $p<.10$), but none of the individual variables was independently significant. The overall F test for the program variables was insignificant.

Previous evaluations of this objective also failed to detect significant project effects on the acquisition of computation skills in spite of the variety of tests and levels that were used and the different statistical models that were applied. The evaluators note that the explanatory power of the current model is substantially lower in mathematics computation ($R^2=.29$) than for other subtests and this may indicate deficiencies in the test or in the applicability of the conceptual model to computation.

Objective 6: There will be a statistically significant ($p<.10$) improvement in the ESOL pupils' rate of acquisition of English skills as measured by the Test of Aural Comprehension.

This objective was not attained. When students in ESOL classes at project schools were tested, those who used the learning centers did not acquire aural English skills at a rate that was significantly different from the rate of the other ESOL students in their schools.

Table 5 presents the analysis of aural comprehension scores for the 176 students, with complete background data, who took the Test of Aural Comprehension in the spring at project schools. The statistical model and tests of significance used in this analysis were the same as in the evaluation of Objective 3. The control variables reflecting the pupil's initial ability and the differences among the schools were the only ones to attain the specified level of significance, suggesting that performance was related to pupil background but not to use of a learning center.

Objective 7: The Spanish vocabulary and reading skills of pupils who receive Spanish instruction will be improved to the extent that there will be a statistically significant ($p<.10$) relationship between the number of months the pupil has been in the program and CTBS/Español reading and vocabulary scores, when pupil background characteristics have been controlled statistically.

This objective was attained. When the individual student backgrounds were taken into account there was a statistically significant relation between the number of months in the program and the student's reading scale score on the CTBS/Español test. The effect of the program on reading in Spanish was most pronounced in the initial months of exposure and tended to level off at the beginning of the second year of participation.

Table 6 presents the findings of the analysis of Total Reading score in Spanish. (A description of the statistical model and tests of significance used in this analysis appears in the evaluation of Objective 3.) Separate analyses of the Reading Vocabulary and Reading Comprehension subtests, which together yield the Total Reading score, were similar to the results presented here.

All but one of the background variable sets had statistically significant relationships to Spanish reading performance. The variable set reflecting the amount of time pupils had participated in ESOL was unrelated to Spanish performance.

The key variable set, Program, reflecting the number of months of learning center program participation was significant ($F=1.85$, $df=4.80$, $p<.05$), indicating that participation in a learning center was related to Spanish test performance. The set, Program, comprised four variables, a linear measure of the amount of learning center use at each project school and a quadratic trend for all schools combined. The analysis suggested that upon entry into the project, participation increased language skills at about nine scale score points per month at Edison and Little Flower. At Kensington, the trend was similar but did not attain statistical significance. The negative quadratic trend indicated that most of the gain attributable to learning center use occured in the students' first year of participation, but some growth continued into the second year. Since all three schools had positive linear weights, the evaluators concluded that the overall effect of the project was to improve the scores of students into the second year of participation.

The finding of substantial, positive trends for learning center use at Little Flower and at Kensington High Schools was unanticipated because the Spanish language was not taught directly at these learning centers. It is hypothesized that skills developed in English language instruction in the learning centers were transferred to performance in the Spanish language. This is the mirror image of the thesis of skills acquired in the mother tongue transferring to English that is frequently used to justify the inclusion of mother tongue instruction in bilingual programs.

Objective 8: The daily attendance of public school students in the project will exceed, to a statistically significant degree ($p<.10$), the daily attendance of other Hispanic students in the project public schools.

This objective was attained. The average daily attendance for Hispanic public school project participants was 88.34% present. This compared favorably with the average for the other Hispanic students at the public project schools which was 71.26%.

A total of 167 Hispanic public school students who used the bilingual learning centers and completed the school year had complete fall to spring attendance records. These students were compared to 993 similar students at the project schools who had not used the centers. The difference between the averages of the two groups was statistically significant ($t=14.53$, $df=1158$, $p<.001$).

(This objective was not evaluated for the diocesan site, Little Flower, because the attendance data of ethnic groups were not readily available.)

Objective 9: The percentage of public school pupils enrolled in the project who complete the school year will exceed, to a statistically significant degree ($p<.10$), the percentage of other Hispanic pupils in the project public schools who complete the school year.

This objective was attained, with the dropout rate for students who used the learning center estimated to be only one-sixth the rate found among other Hispanic students in their schools.

The students using the learning center in April were compared to other Hispanic students enrolled at the public sites at the same time. The percentages of dropouts for the period April to June were compared. Of the 173 learning center students on roll, all but three, or 98.3%, completed the school year. In comparison, of the 1,375 other Hispanic students on roll in the project schools at that time, 1,227, or 89.2%, completed the school year. The statistical significance of the comparison exceeded the criterion of the objective (chi-square = 13.23, df=1, $p<.001$).

The April to June period was examined because it was not possible to identify the participation and dropout status of all pupils enrolled in the project schools prior to April. From April forward, such information was available reliably.

IMPLICATIONS AND CONCLUSIONS

This program was fully implemented at all three project sites. The learning centers were essentially fully equipped, and the instructional programs to which they were coupled were consistent with the project design as it had evolved in the first project year.

Although the learning centers were similiar and generally contained the same types of instructional devices, the programs to which they were coupled differed in comprehensiveness and the degree to which they emphasized acquisition of skills in the Spanish language. For this reason, the evaluation of pupil performance was designed to be sensitive to the differences among the sites, as well as to provide an overall assessment of the value of learning centers. Significant growth attributable to learning center participation was found for English reading and language measures and for Spanish reading. Improvement in pupil attendance and reduction in dropout incidence were observed as a result of project participation, but no improvements in mathematics or English aural comprehension skills were observed.

A surprising finding, worthy of study in a more controlled experiment, was the growth observed for Spanish reading, even at sites where the subject was not formally taught in the learning centers. Bilingual educators often claim that there is a transfer of skills developed in the mother tongue to the English language. In this project an example of transfer in the opposite direction, from English to the mother tongue appears to have been detected.

TABLE 1

Equipment in Bilingual Learning Centers at Year End

	Number in Each Center		
	Edison	Kensington	Little Flower
Listed in Objective			
System 80 Machines and Software	5	4	2
Beginning Concepts Learning Kit	0	0	0
Language Masters	1	1	1
Skill Tapes in Mathematics	0	0	0
Tape Recorders (Cassette)	12	2	3
Spellbinders	0	0	0
Voxcoms	1	1	1
Craig Creative Curriculum Readers	1	1	1
Calculators	13	12	0
New, Not Listed in Objective			
Craig Creative Curriculum Reader Software	1	1	0

TABLE 2

Analysis of the Stanford Achievement Test
Reading Total Scale Score

Source	df	F	Regression Trends	
			Linear	Quadratic
BACKGROUND	15	8.58*		
Age	2	2.29	-2.2702	.0048
U.S.	2	.01	.0105	-.0001
ESOL	2	1.89	- .9340*	.0136*
School	2	5.68*		
Ability	7	5.27*		
PROGRAM	4	3.11*		
Kensington	1		3.0064*	
Edison	1		1.3891	
Little Flower	1		3.4874*	
All Schools	1			-.0900*

R-Square = .65 Mean Score = 134.5 N = 96

*p<.10

Table 2 shows the effect of the program on reading scores in English. The overall rate of reading acquisition was significantly related to the number of months in the program. The program's impact on reading score tends to level off over time.

TABLE 3

Analysis of the Stanford Achievement Test
Language Scale Score

Source	df	F	Regression Trends	
			Linear	Quadratic
BACKGROUND	15	5.27*		
Age	2	0.18	-1.024	.002
U.S.	2	0.38	- .391	.002
ESOL	2	1.63	- .106	.005
School	2	1.14		
Ability	7	2.83*		
PROGRAM	4	2.78*		
Kensington	1		1.948	
Edison	1		.246	
Little Flower	1		2.413	
All Schools	1			-.073

R-Square = .54 Mean Score = 138.8 N = 96

*p<.10

Table 3 shows the effect of the program on English language scores. The overall rate of language acquisition was significantly related to the number of months in the program. The program's impact on language scores tends to level off over time.

TABLE 4

Analysis of the Mathematics Computation Score

Source	df	F	Regression Trends	
			Linear	Quadratic
BACKGROUND	15	2.41*		
Age	2	0.41	-.06521	.00014
U.S.	2	0.89	.00841	.00001
ESOL	2	0.16	-.00249	.00011
School	2	1.28		
Ability	7	0.65		
PROGRAM	4	0.31		
Kensington	1		.05421	
Edison	1		.02414	
Little Flower	1		.03370	
All Schools	1			-.00087

R-Square = .29 Mean Score = .022 N = 102

*p<.10

Table 4 shows no significant relation between program participation and mathematics scores when background variables are held statistically constant.

TABLE 5

Analysis of the Test of Aural Comprehension Score

Source	df	F	Regression Trends	
			Linear	Quadratic
BACKGROUND	14	8.23*		
Age	2	1.54	1.9920	-.0006
U.S.	2	2.18	.0875	-.0006
ESOL	2	1.96	.3318	-.0032
School	2	3.73*		
Ability	6	4.21*		
PROGRAM	4	0.52		
Kensington	1		.5801	
Edison	1		.3901	
Little Flower	1		.2312	
All Schools	1			-.0001

R-Square = .43 Mean Score = 27.8 N = 176

*p≤.10

Table 5 shows no significant relation between program participation and English aural comprehension scores when background variables are held statistically constant

TABLE 6

Analysis of the CTBS - Español
Total Reading Scale Score

Source	df	F	Regression Trends	
			Linear	Quadratic
BACKGROUND	14	3.54*		
Age	2	2.97*	-16.0519*	.037*
U.S.	2	2.84*	- 1.209	.0027
ESOL	2	.30	1.5106	-.0123
School	2	2.40*		
Ability	6	3.65*		
PROGRAM	4	1.85*		
Kensington	1		7.0230	
Edison	1		9.0103*	
Little Flower	1		9.6926*	
All Schools	1			-.3475*

R-Square = .42 Mean Score = 453.8 N = 99

p<.10

Table 6 shows the effect of the program on reading scores in Spanish. The overall rate of Spanish reading acquisition was significantly related to the number of months in the program. The program's impact on reading scores tends to level off over time.